

NOTES ON AUSTRALIAN TAXA OF *ACACIA* NO. 7.

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## ABSTRACT

Tindale, Mary D. (National Herbarium of New South Wales, Royal Botanic Gardens, Sydney, N.S.W., Australia 2000) 1980. Notes on Australian taxa of *Acacia* No. 7. *Telopea* 2 (1): 113-125, figs 1-4.—Two new phyllodinous species of *Acacia* (Family Mimosaceae) from the Northern Territory are described, namely *A. praetermissa* Tindale and *A. producta* Tindale. The characteristics of the phyllodinous *A. stigmatophylla* group from tropical Australia are discussed. A new record of a phyllodinous species, namely *A. jennerae* Maiden for western New South Wales, is cited. A new bipinnate species from south-eastern New South Wales, *A. olsenii* Tindale, is described.

## INTRODUCTION

Two new species, *Acacia praetermissa* and *A. producta*, which I examined in the field during a visit in July 1979 to the Northern Territory, sponsored by the Australian Biological Resources Study, are described. In addition a new species, *A. olsenii*, and a new record, *A. jennerae*, are included in this paper, so that they may be listed in the forthcoming census of the Gymnosperms and Angiosperms of New South Wales.

## SECT. JULIFLORAE (Benth.) Maiden &amp; Betche

*Acacia praetermissa* Tindale, sp. nov.

Frutex usque 1.2 m altus, cortice truncorum laevi, schistacea, maculis albis parvis. Ramuli subglaucci, glabri vel apicem versus pilis crispatis, griseis sparse ornati, teretes, purpureo-brunnei, lenticellis numerosis ornati, leviter costati. Phyllodia angustissime oblanceolato-elliptica, subcoriacea, falcata, 7.5-17 cm longa, 0.4-1.6 cm lata, late patentia, glabra vel pilis crispatis sparse induta, vena mediana prominenti, venis secundariis parallelis 2-4, venulis minoribus anastomosantibus, basin versus sensim angustata, apice obtuso vel late obtuso, acriter pungente mucrone adunco, supra pulvinum glandula orbiculari vel ovali 0.1-0.3 mm longa instructa, pulvino 1-2 mm longo. Stipulae atrobrunneae, anguste lanceolatae, caudatae, tenues. Spicae circiter 20-27 florae, aureae, solitariae vel binatae in axillis phyllodiorum exortae; pedunculi glabri vel pilis crispatis induti. Bracteae pallide brunneae vel atro-brunneae, fimbriatae, tenues, ovatae ad anguste lanceolatae. Bracteolae 0.5-0.6 mm longae, spathulatae, fimbriatae, petiolis brevibus. Flores 5-meri, in spicis laxè dispositi, ante anthesin orbiculares. Calyx circiter 0.5-1.0 mm longus; lobis acutis, partem quartam vel dimidiam longitudinis tubi acquantibus, costatis, apicem versus sparse fimbriatis. Corolla 1.5-2.0 mm longa, glabra, usque ad tertiam partem vel duas partes longitudinis tubi divisa, petalis acutis, costis prominentibus. Stamina numerosissima (circiter 55), filamentis 2.0-3.5 mm longis, antheris eglandulosis bilocularibus. Ovarium subsessile, bruncum, ovale vel oblongum, circiter 0.6-0.8 mm longum, sparse pilosum vel villosum; stylus circiter 2-5 mm longus; stigma non expansum. Legumina plus minusve plana, oblique nervata, 4.5-7.5 cm longa, 0.8-1.0 cm lata, valvis ligneis, ex apice elasticè revolutis, marginibus incrassatis praedita, anguste oblanceolata, apicem versus dilatata, apice mucrone brevi uncinato praedita, inter semina non contracta, basin versus sensim angustata. Semina brunnea, compresso-orbicularia, circiter 6 mm longa, circiter 4.5 mm lata, circiter 1.2 mm crassa, in legumine oblique disposita; areolus apertus, circiter 2.5-3.0 mm longus; funiculus-arillus albus, conicus. Fig. 1.

Fig. 1

R. A. Roden del.

*Acacia praetermissa* Tindale

a. Flowering branchlet,  $\times \frac{3}{4}$ . b. legume,  $\times \frac{3}{4}$ . c. seed,  $\times 2$ . d. anther,  $\times 26\frac{3}{4}$ . e. gland of phyllode,  $\times 13\frac{1}{4}$ . f. base of phyllode showing pulvinus,  $\times 4\frac{3}{4}$ . g. gynoeceium,  $\times 13\frac{1}{4}$ . h. flower,  $\times 13\frac{1}{4}$ . i. bracteoles side and dorsal views,  $\times 13\frac{1}{4}$ . Vouchers: a-f, h-i, (M. D. Tindale 6030 & C. Dunlop). g, (N. G. Eddy 120).

Shrub up to 1.2 m high, with a single trunk or tufted on a woody stock; bark smooth, bluish grey with small white blotches. *Branchlets* subglaucous, glabrous or clothed towards the apex with crisped grey hairs, terete, purplish brown, bearing numerous lenticels, lightly ribbed. *Phyllodes* very narrowly oblanceolate-elliptical, subcoriaceous, falcate, 7.5–17 cm long, 0.4–1.6 cm broad, spreading widely, glabrous or sparsely clothed with crisped grey hairs, the midrib prominent, with 2–4 secondary parallel veins and loosely anastomosing minor veinlets, tapering gradually towards the base, the apex obtuse or broadly rounded with a hooked pungent-pointed mucro, the pulvinus 1–2 mm long, with an orbicular or oval gland 0.1–0.3 mm long above the pulvinus. *Stipules* dark brown, narrowly lanceolate, caudate, thin. *Spikes* c. 20–27 flowers, golden, single or in pairs, borne in the axils of the phyllodes; peduncles glabrous or clothed with crisped hairs. *Bracts* light to dark brown, thin, fimbriate along the margins, ovate to narrowly lanceolate. *Bracteoles* 0.5–0.6 mm long, spatulate, fimbriate, the stalks short. *Flowers* 5-merous, loosely arranged on the spikes, orbicular in bud. *Calyx* c. 0.5–1.0 mm long, the lobes acute, dissected from  $\frac{1}{4}$ – $\frac{1}{2}$  of the length of the tube, with a midrib, sparsely fimbriate towards the apex. *Corolla* 1.5–2.0 mm long, glabrous, dissected from  $\frac{1}{3}$ – $\frac{1}{2}$  of its length; petals acute, each with a prominent midrib. *Stamens* very numerous (c. 55), the filaments 2.0–3.5 mm long, the anthers eglandulose, bilocular. *Ovary* subsessile, brown, oval or oblong, c. 0.6–0.8 mm long, sparsely pilose or villous; style c. 2–5 mm long; stigma not expanded. *Legumes*  $\pm$  flat, obliquely nerved, 4.5–7.5 mm long, 0.8–1.0 cm broad, with woody valves and thickened margins, opening by rolling back elastically from the apex, narrowly oblanceolate, usually expanded towards the apex, which has a short hooked mucro, not constricted between the seeds, gradually narrowed towards the base. *Seeds* greenish brown, compressed-orbicular, c. 6 mm long, c. 4.5 mm broad, c. 1.2 mm thick, oblique in the legume, the pleurogram light brown, the arcole open, c. 2.5–3.0 mm long, the funicle-aril white, conical.

**HOLOTYPE:** 1.5 km N. of Emerald Springs Roadhouse, Stuart Highway, Northern Territory, c. 13° 37' S, c. 131° 37' E, very spindly shrub 0.9–1.2 m high, trunk c. 1.3 cm diam. at 90 cm high, bark bluish grey with small white blotches, canopy small and loose, inflorescences golden, fruit green to brown, growing in slatey soil, in *Eucalyptus alba*–*E. dichromophloia* woodland with *E. tetradonta* regrowth, *Livistona humilis* and *Ficus racemosa*, M. D. Tindale 6102 & C. Dunlop, 12.vii.1979 (NSW). **ISOTYPES:** BRI, CANB, CBG, DNA, K, US.

**DISTRIBUTION:** Emerald Springs–Pine Creek district, in the northern part of the Northern Territory, on hillsides in stony soil in eucalypt woodland.

**FLOWERING PERIOD:** mature flowers present in March and July, but very few specimens available for study.

**FRUITING PERIOD:** young fruit in March, mature pods in July but few collections were available.

**SPECIMENS EXAMINED:** NORTHERN TERRITORY: NW. of Pine Creek, 13° 39' S, 131° 39' E, S. T. Blake 16329, 7.1946 (BRI, NSW); c. 5 miles [c. 8 km] N. of Pine Creek, 13° 37' S, 131° 47' E, N. G. Eddy 120, 3.1958 (NT, NSW).

The specific epithet 'praetermissa' means easily overlooked. Even when they are in full bloom, plants of this species are rather insignificant.

*A. praetermissa* would be classified as a member of the *Juliflorae* according to the schemes of Bentham (1864 and 1875) and Pedley (1978), but in Vassal's classification (1972) it would be placed in the subgen. *Heterophyllum* sect. *Heterophyllum* subsect. *Spiciferae*.

There appear to be no very close allies of *A. praetermissa*. However it has some features of the *A. stigmatophylla* species-complex (see page 118) and may be compared with the latter group, from which it differs in the following respects:—minor veinlets between the 3–5 parallel main veins very loosely anastomosing, ribs of the branchlets not minutely convoluted and the seeds compressed-orbicular.



## GROUP OF ACACIA STIGMATOPHYLLA

*Acacia producta* Tindale, sp. nov.

*A. stigmatophyllae* A. Cunn. affinis sed differt: inflorescentiis globosis, valvis leguminum concoloribus et inter semina dissepimentis tenuibus. Fig. 2.

Spindly or bushy, erect or sometimes prostrate, resinous shrub up to 1.5 m high and 2 m wide, with virgate branches bearing the inflorescences, single-stemmed or branched near the ground, bark dark grey and smooth. *Branchlets* angled to almost flattened and yellowish-fawn towards the upper parts, otherwise terete and brownish, the ribs yellowish and often minutely convoluted, sparsely clothed with short, white, appressed hairs when young. *Phyllodes* narrowly oblanceolate to oblanceolate or very narrowly oblong-elliptical to narrowly oblong-elliptical, straight or slightly falcate, 3–7.5 cm long, 0.5–1.5 cm broad, often resinous especially towards the apex when young, usually with 3 prominent, parallel main veins reaching the base or one of them sometimes confluent with the lower margin, 2–4 parallel semi-prominent veins and very closely spaced, parallel,  $\pm$  anastomosing minor veinlets, the apex with an obliquely placed, rarely hooked mucro less than 1 mm in diam., the margin pale and often minutely convoluted, the base slightly oblique and with a cluster of short white hairs, the farinose pulvinus 1–2.5 mm long, the gland conspicuous just above the pulvinus. *Capitula* 5–11 mm in diam., bright yellow, viscid when young, single or in pairs in the axils of small modified phyllodes, borne on erect virgate branches; peduncles c. 5–14 mm long, 0.7–1.0 mm broad, slightly viscid, tawny, prominently ridged, glabrous except for a few, short, white hairs around the base. *Bract* red-brown, clothed with short, white, appressed hairs. *Bracteoles* 1.2–1.5 mm long, fawn, the stalk long, narrow and fimbriate towards the apex, the expanded, peltate, apical portion fimbriate. *Flowers* 5-merous, bright yellow, 19–27 per capitulum, acute in bud. *Calyx* 0.5–1.2 mm long, glabrous except for a few white hairs on the lobes, cupular, scarcely dissected into very short lobes with a darker yellow midrib and apex. *Corolla* 1.5–2.5 mm long, the petals 0.4–0.6 mm broad, dissected to c.  $\frac{1}{3}$  of its length, tubular, glabrous, the midrib and apical portion orange-tawny. *Stamens* numerous, 3.4–6.5 mm long, the anthers eglandulose and bilocular. *Ovary* subsessile, narrowly oblong, golden yellow to red-brown, 0.6–1.4 mm long, clothed rather densely with stiff, white hairs especially towards the obtuse apex, the style c. 2–3 mm long, glabrous, affixed to one side of the apex, the stigma not expanded. *Legumes* tawny, greenish-brown to red-brown, resinous when young, scurfy, opening elastically from the apex, woody, flat but thick, straight or slightly falcate, 3.9–5.7 cm long, 3.2–4.5 mm broad, with conspicuous diagonal veins, the margins prominent, the surface and margins very sparsely clothed with short white hairs and sometimes a few longer hairs, the apex broader and hooked, the base tapering gradually. *Seeds* dull, dark brown, compressed, irregularly oblong-elliptical, oblique in the legume and separated by thin partitions, the pleurogram pale-coloured, the arcole open, the funicle stiff, c. 1 mm long, expanded into a cupular axil on top of the seed, the combined “funicle-aril” cream-coloured or tawny, conical, 2–4 mm long.

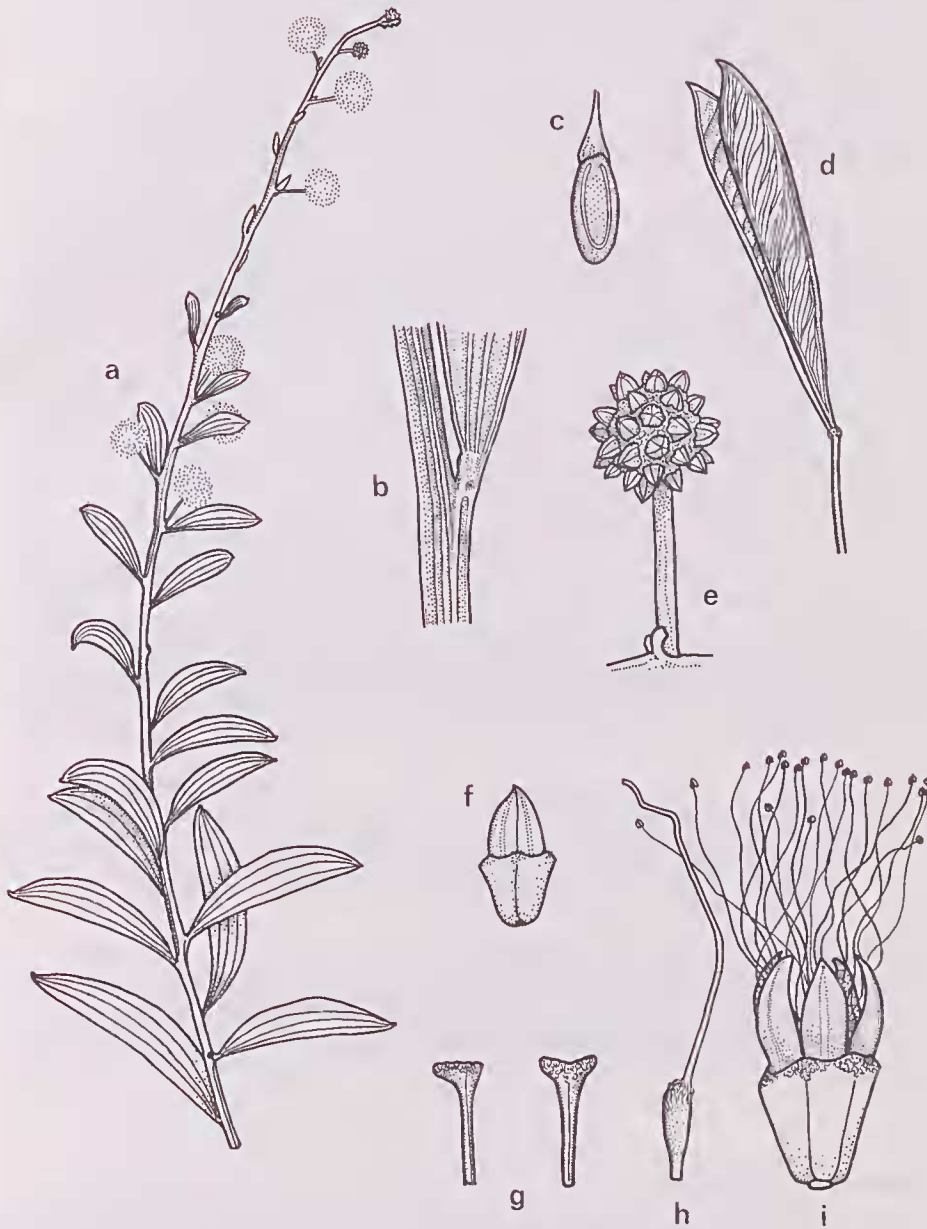
**HOLOTYPE:** near the Caravan Park, Katherine National Park, 14° 20' S, 132° 22' E, Northern Territory, shrub 1.5 m high, with bright yellow inflorescences, in very sandy soil in open *Eucalyptus phoenicea*—*Buchanania obovata* woodland, M. D. Tindale 6080 & C. Dunlop, 10.vii.1979 (NSW). **ISOTYPES:** CANB, DNA, K.

**DISTRIBUTION:** NORTHERN TERRITORY: north of latitude 16° 05' S, in sand, sandy loam or sandy silts, mostly in eucalypt woodland (usually *Eucalyptus clavigera*, *E. miniata*, *E. phoenicea* and *E. tetradonta*), but also in shrubby heathland and in seasonal swamps, often associated with *Triodia* spp., frequently occurring on rocky plateaux and mostly on laterite or sandstone.

**FLOWERING AND FRUITING PERIODS:** all the year (C. Dunlop, pers. comm.).

Fig. 2

R. Griffiths del.

*Acacia producta* Tindale

a. Flowering branchlet,  $\times \frac{2}{3}$ . b. branchlet and base of phyllode, showing the pulvinus,  $\times 3\frac{1}{2}$ . c. seed,  $\times 3\frac{1}{2}$ . d. legume,  $\times 1$ . e. capitulum in bud,  $\times 4$ . f. flower bud,  $\times 10$ . g. bracteoles, side and dorsal views,  $\times 13\frac{1}{2}$ . h. gynoceium,  $\times 13\frac{1}{2}$ . i. flower,  $\times 13\frac{1}{2}$ . Vouchers: a-b. (R. A. Perry 1855). e-i. (M. Lazarides 7622).

SPECIMENS EXAMINED: 5 miles [8 km] E. of Goyder River Crossing, 12° 51' S, 135° 05' E, *J. R. Maconochie* 1480, 6.1972 (NSW, NT 35808); 5 miles [8 km] NE. of Goyder River Crossing, 12° 51' S, 135° 05' E, *N. Byrnes* 2643, 6.1972 (BR1, CANB, DNA, NSW, NT); 13° 11' S, 133° 00' E, *M. Lazarides* 7617, 7.1972 (BR1, CANB, DNA, K, L, NSW); 13° 15' S, 133° 12' E, *M. Lazarides* 7622, 7.1972 (BR1, CANB, DNA, K, L, NSW, US); 13° 19' S, 132° 31' E, (c. 21.7 km N. of El Sharana Mine), *M. Lazarides* 7862, 2.1973 (CANB, NSW); 13° 28' S, 132° 37' E, (c. 12.8 km NE. of El Sharana Mine), *M. Lazarides* 7868, 2.1973 (CANB, NSW); levee of Katherine River, Stuart Highway, 14° 28' S, 132° 16' E, *M. D. Tindate* 6041 & *C. Duulop*, 7.1979 (A, AD, BR1, CBG, MEL, PERTH, US); Bing Bong Road, c. 15° 37' S, 136° 20' E, *C. H. Gittins* 1321, 7.1967 (NSW 101460).

The specific epithet 'producta' refers to the elongated virgate branches bearing the capitula.

*Acacia producta* differs from *A. stigmatophylla* in its globose inflorescences, concolorous valves of the legumes and thin partitions between the seeds. The latter species is characterized by distinctive legumes with light reddish or fawn patches on the outer surface of the woody valves coinciding with the oblique seeds inside the fruit, and brown oblique stripes corresponding with the thick partitions between the seeds.

*A. producta* is a member of the previously unrecognized, tropical Australian group of *A. stigmatophylla* which cuts across previous classifications and is distinguished by the following characteristics:—Shrubs up to 1.5 m high, mostly resinous. *Branchlets* with translucent ribs which are usually minutely convoluted. *Phyllodes* multinerved usually with 1–3 parallel main veins, several parallel secondary veins and minor veinlets which are closely spaced with slight anastomoses. *Inflorescences* globose or spicate. *Flowers* 5-merous. *Calyx* not deeply lobed, the sepals mostly with a midrib. *Petals* with a midrib. *Legumes* opening elastically from the apex, narrowly oblanceolate, the woody flat valves with oblique veins and prominent margins on the outer surface and partitions between the seeds on the inner surface, the apex hooked, the base tapering gradually. *Seeds* dark brown or blackish-brown, ± oblong-compressed, oblique in the legume, the pleurogram pale-coloured, the areole open and the funicle-aril cream-coloured or tawny, conical. To this group belong:

1) the following taxa with capitula:

*A. producta*, *A. translucens* A. Cunn. ex Hook.,  
*A. setulifera* Benth., *A. nuperrima* E. G. Baker subsp.  
*nuperrima* and *A. yirkallensis* Specht

2) the following taxa with spicate inflorescences:

*A. stigmatophylla*, *A. wickhamii* Benth., *A. nuperrima*  
 E. G. Baker subsp. *cassitera* Pedley, *A. ocnocarpa*  
 Benth., and *A. drepanocarpa* F. Muell.

# 1) Species with capitula

The first four above-mentioned species with capitula would be placed in the *Plurinerves* by Benthham (1864 and 1975) as well as Pedley (1978) and in the subgenus *Heterophyllum* sect. *Heterophyllum* subsect. *Globiferae* by Vassal (1972). *A. yirkallensis* was classified by R. L. Specht (1958: 233) as a member of the *Uninerves* closely allied to *A. gnidium*, when he described the former species from the Northern Territory. Certainly the midrib of the phyllodes in *A. yirkallensis* is prominent thus suggesting the *Uninerves* but there is also a rather insignificant, parallel, secondary vein on each side of the midrib. However, *A. gnidium* does not belong in the *A. stigmatophylla* group, as the fruit is very different.



A very common member of this group is *A. translucens* but it differs from *A. producta* in the following respects:—the phyllodes are mostly smaller (0.8–4.5 cm long and 0.8–1.5 cm broad), less distinctly veined, usually falcate, asymmetrical with the upper side very convex and the lower  $\pm$  straight or slightly concave. The fruit and seeds are similar to those of *A. producta* and *A. nuperrima*, but are concolorous not as in *A. stigmatophylla* and *A. wickhamii*.

*A. setulifera* is an uncommon species from the Northern Territory and north-west Western Australia. It is allied to, and should perhaps be included with, *A. nuperrima*. The falcate phyllodes are 5–12 mm long and 2–5 mm broad with a characteristic, apical, very oblique, bristle-like appendage.

*A. nuperrima* which ranges from NE. Queensland to the northern portion of Western Australia is morphologically rather similar to *A. producta* except for the smaller, down-curved or sigmoid phyllodes 1–2 cm long and 2–5 mm broad, an oblique mucro at the apex of each phyllode and smaller, 10–20 flowered capitula 3–7 mm in diameter. Pedley (1978: 188–9) described *A. nuperrima* subsp. *cassitera* in which the inflorescence is a spike but may be reduced to a capitulum even on the same plant, whereas in subsp. *nuperrima* the inflorescence is always globose.

## 2) Species with spicate inflorescences

Traditionally, Australian species of *Acacia* with spicate inflorescences have been placed in the *Juliflorae* except the *A. drummondii* group in the *Pulchellae* and *A. dorothea* Maiden, which is closer to the *Uninerves Racemosae* (see Tindale and Roux, 1974: 838).

*A. stigmatophylla*, *A. wickhamii*, *A. oncinocarpa* and *A. drepanocarpa* were classified as *Juliflorae* by Bentham (1864 and 1875). *A. nuperrima* subsp. *cassitera* is retained in the *Plurinerves* by Pedley (1978) with subsp. *nuperrima*, despite its often spicate inflorescence. Vassal would place the first four above-mentioned species in subgen. *Heterophyllum* sect. *Heterophyllum* subsect. *Spiciferae*.

Although *A. stigmatophylla* has elongated spicate inflorescences and has been traditionally classified as a member of the *Juliflorae*, it is morphologically very similar to *A. producta* which has often been misdetermined as the former species despite the capitula. They share the same habitat preferences. Both are small resinous shrubs with virgate branches and very narrowly to narrowly elliptical oblong (6:1 to 3:1), thinly coriaceous phyllodes with thickened, minutely convoluted margins.

*A. wickhamii* is a wide-ranging species in tropical Australia. Pedley (1978: 136) comments that 'It is rather isolated in the *Juliflorae* but it is similar, particularly in characters of the pod, to *A. nuperrima* subsp. *cassitera* in the *Plurinerves*'. The fruits of *A. wickhamii* are distinctive being very similar to those of *A. stigmatophylla*.

The other two species in the *A. stigmatophylla* group, viz. *A. oncinocarpa* and *A. drepanocarpa* show no tendency towards globose inflorescences.

This group has not been formalized as a section or subsection, as further investigations are necessary. However it is evident that there is a breakdown in the circumscription of the Sections *Plurinerves* and *Juliflorae*.

Fig. 3

R. Griffiths del.

*Acacia jennerae* Maiden

a. Seed,  $\times 1$ . b. legume,  $\times \frac{2}{3}$ . c. pulvinus,  $\times 3\frac{1}{2}$ . d. flowering branchlets,  $\times \frac{2}{3}$ . e. flower,  $\times 13\frac{1}{2}$ . f. bracteole,  $\times 13\frac{1}{2}$ . g. gynoeceium,  $\times 13\frac{1}{2}$ . h. flower bud,  $\times 6\frac{2}{3}$ . i. capitulum in bud,  $\times 3\frac{1}{2}$ . j. phyllode and branchlet,  $\times \frac{2}{3}$ . k. anther,  $\times 40$ . Vouchers: a. (*I. V. Newman* 795). b. (*I. P. George* NSW 108158). c-i, k. (*I. P. George* NSW 108157). j. (*G. M. Cunningham* 5401).



## SECT. PHYLLODINEAE DC.

*Acacia jennerae* Maiden

*Acacia jennerae* Maiden in Ewart and Davies, Flora of the Northern Territory: 333 (1917).

HOLOTYPE: at waterhole, about 80 miles [c. 129 km] NE. of  $\frac{S}{T}$  2 [Camp 2], Northern Territory, G. F. Hill 295, 8.vi.1911 (NSW).

The recent discovery of *Acacia jennerae* on the Far Western Plains of New South Wales represents a considerable extension of range for this species which also occurs in the Northern Territory and south-western Western Australia. As this is a poorly known species, the specimens which I have examined from the two latter regions are also included. It is a shrub or tree usually 2–4.5 m high with greyish green phyllodes and golden, globose flower-heads.

An illustration of the phyllodes and flowers accompanied the original description by J. H. Maiden (1917) but the very elongated, black or brownish, moniliform legumes were unknown at that time. However, the latter have been depicted in Fig. 3 by Miss Robin Griffiths.

*A. jennerae* was classified by Maiden as a member of the *Uninerves Racemosae*. According to Vassal's scheme (1972) it would belong to subgen. *Heterophyllum* sect. *Uninervea* and according to Pedley's scheme (1978) to subgen. *Heterophyllum* sect. *Phyllodineae*. This species is a member of the *A. microbotrya* group.

DISTRIBUTION: Far Western Plains of New South Wales, the southern region of Northern Territory and the Menzies–Southern Cross region of the south-west of Western Australia. It occurs in sandy soil on plains, often along the banks of streams or near salt lakes, in *Eucalyptus-Acacia* savannah, in *Atriplex-Eucalyptus loxophleba* woodland and in *Casuarina-Heterodendrum oleifolium-Myoporum platycarpum* scrub.

FLOWERING PERIOD: March–August.

FRUITING PERIOD: probably April–November.

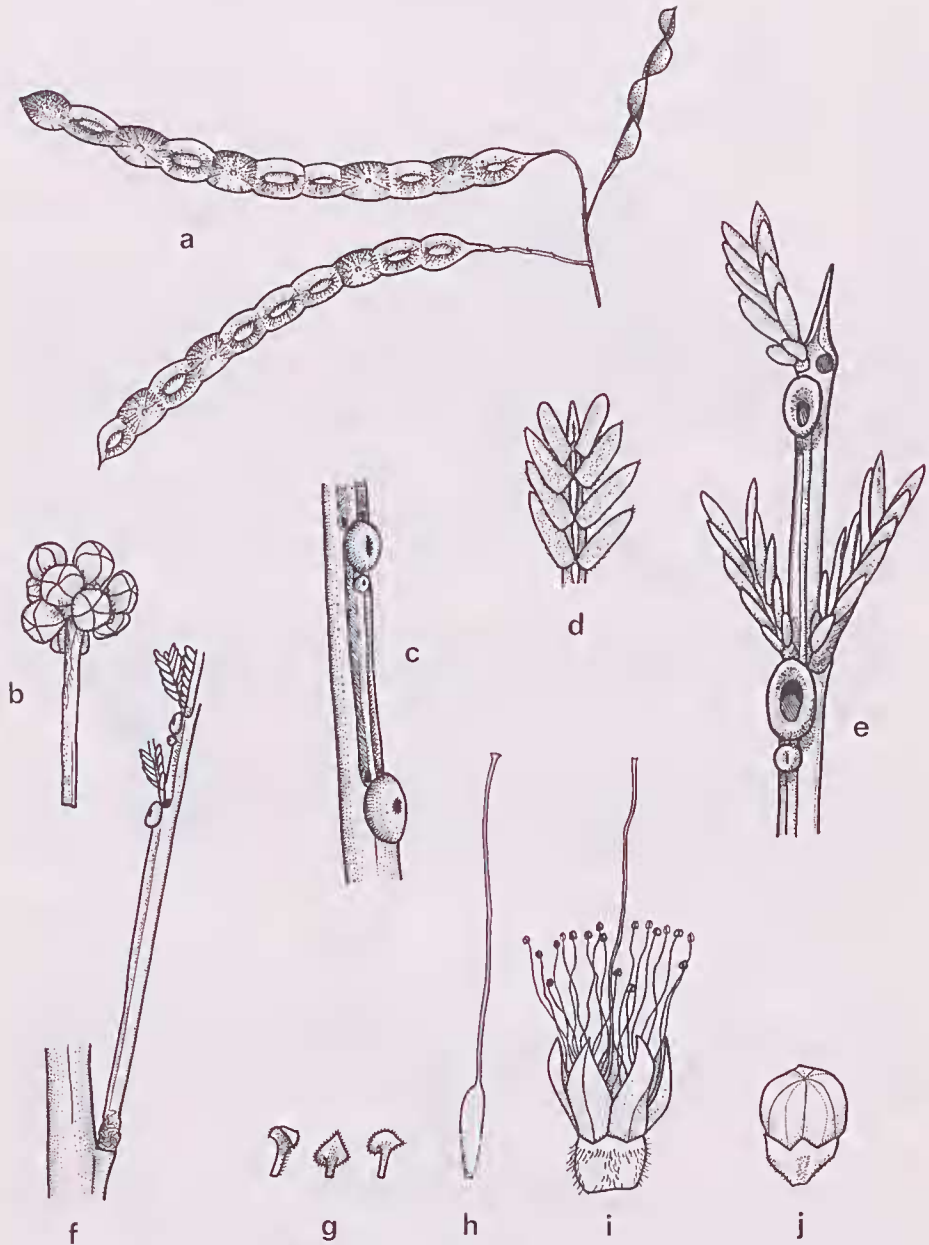
SPECIMENS EXAMINED: NORTHERN TERRITORY: Crown Creek, [c. 8.1 km] W. of "Coniston" H.S. [22° 10' S, 132° 25' E], G. Chippendale NT 2076, 5.1956 (NSW, NT); Napperby Creek, NW. Stock Route [22° 26' S, 132° 48' E], G. Chippendale NT 1213, 6.1955 (NSW, NT); New Haven, 22° 46' S, 131° 00' E, C. Dunlop 2542, 5.1972 (NSW, NT); S. of "Central Mt Wedge", [c. 22° 51' S, 131° 50' E], G. Chippendale NT 1214, 6.1955 (NSW, NT).

WESTERN AUSTRALIA: South Western Interzone: Menzies, 29° 42' S, 121° 02' E, M. D. Tindale 19 & E. M. Bennett 3.1970 (AD, K, MEL, NSW, PERTH); 32 km E. of Southern Cross, [31° 13' S, 119° 22' E], P. G. Wilson 4043, 4.1966 (NSW, PERTH); 16.6 miles [c. 26.7 km] W. of Southern Cross on the Great Eastern Highway, in *Atriplex-Eucalyptus loxophleba* woodland, M. D. Tindale 65 & E. M. Bennett 3.1970 (CANB, MEL, NSW, PERTH).

NEW SOUTH WALES: Far Western Plains: 23.3 km S. of Coonavittia Tank on Wilcannia–Cobar Rd, 31° 32' S, 144° 29' E, G. M. Cunningham 5401, 6.1978 (AD, CANB, CBG, K, MEL, NSW, PERTH); 81 miles [c. 130 km] E. of Wilcannia, (i.e. 14 miles [22.5 km] E. of Coonavittia Tank), on Barrier Highway, Wilcannia–Cobar region, I. V. Newman 795, 9.1973 (NSW, wood sample for phytochemical survey); Highway 79, 8–11 miles [c. 13–18 km] N. of Coombah, I. P. George NSW 108158, 5.1977 (NSW); 5 km N. of Coombah, on Highway 79, 32° 54' S, 141° 37' E, I. P. George NSW 108157, 4.1977 (NSW).

Fig. 4

R. Griffiths del.

*Acacia olsenii* Tindale

a. Pods,  $\times \frac{2}{3}$ . b. capitulum in bud,  $\times 3\frac{1}{2}$ . c. glands at base of rhachis,  $\times 6$ . d. apex of pinna,  $\times 8$ . e. apex of rhachis,  $\times 6$ . f. petiole,  $\times 2$ . g. bractcoles, dorsal views showing the range of variation,  $\times 13\frac{1}{2}$ . h. gynoecium,  $\times 13\frac{1}{2}$ . i. flower,  $\times 13\frac{1}{2}$ . j. bud,  $\times 13\frac{1}{2}$ . Vouchers: a, d. (*I. Olsen* 3094). b-c, e-j. (*R. Coveny* 6357, *P. Hind* & *M. Parris*).

## SECT. BOTRYCEPHALAE (Benth.) Taub.

*Acacia olsenii* Tindale, sp. nov.

*A. storyi* Tindale arcte affinis sed differt: floribus in capitulo paucioribus (7-12), capitulis aureis, petalis liberis, paribus pinnularum numerosioribus (52-106), marginalibus pinnularum ciliis majoribus albis. Fig. 4.

Tree 4-15 m high; bark of the trunk smooth except sometimes slightly corrugated towards the base in older trees, grey-green, dark grey, brown or black. *Branchlets* bluish glaucous, mostly glabrous but rarely very sparsely clothed with fine, spreading, white hairs along the non-prominent ridges, terete except for the young branchlets often vertically flattened. *Young tips* brownish-green or cream-coloured. *Leaves*: *petiole* 1.5-3.7 cm long, bluish glaucous, vertically flattened, glabrous or sometimes clothed with sparse, short, white hairs usually along each ridge, bearing 1 prominent spherico-depressed, mostly glabrous gland near the base of the lowest pair of pinnae; *rhachis* 5.5-9 cm long, dull brownish green, somewhat vertically flattened, usually with a spherico-depressed gland at the base of each pair of pinnae and sometimes also with 1 or 2 similar but smaller, often contiguous glands. *Pinnae* 9-17 pairs, 3.7-7.6 cm long, c. 2.5-6.0 mm broad, dark green, not glaucous. *Pinnules* c. 52-106 pairs, c. 1-2.5 mm long, c. 0.5-0.7 mm broad, feathery, glabrous except for white cilia along the margins,  $\pm$  oblong to linear, the apex subacute with a tuft of short white hairs. *Capitula* deep yellow, globose, 7-12 flowers in head, borne in racemes or panicles, the peduncles glabrous. *Bract* at the base of the peduncle deltoid, light brown, with very short, fine, white hairs along the margin, sometimes a smaller bract towards the middle of the peduncle. *Bracteoles* 0.5-0.7 mm long, with a narrow, red-brown, fimbriate petiole expanded into a fimbriate, deltoid or peltate, apical portion. *Calyx* 5-merous, 0.3-0.7 mm long, obconical, dissected to  $\frac{1}{3}$ - $\frac{1}{2}$  ( $-\frac{2}{3}$ ) of its length, glabrous or densely pubescent with white hairs, pale yellow with red-brown tips. *Corolla* 1.0-1.4 mm long, red-brown at the base but deep yellow above, with darker midribs and apices on the 5 free, acute or subacute petals with granular margins. *Stamens* numerous, 2.0-2.6 mm long, anthers eglandulose and bilocular. *Ovary* 0.4-1.2 mm long, sessile or subsessile, bluish glaucous, glabrous, oval or  $\pm$  oblong; style glabrous, laterally attached, c. 2.5 mm long; stigma expanded slightly. *Legumes* glaucous, bluish grey, submoniliform, thinly coriaceous, (5-) 10-11 (-12) cm long, 0.6-0.8 cm broad, glabrous with a fairly prominent margin. *Seeds* black, oblong-elliptical, slightly compressed, 6-12 in each legume, longitudinal in the fruit, the funicle filiform at first then expanded into a cream-coloured or tawny pileiform aril on top of each seed, the pleurogram black in seeds which are not quite mature, the arcole open. Fig. 4.

**HOLOTYPE**: 3.2 km ENE. of Dampier trig on the Bendethera Caves fire trail, 53 km SSW. of Braidwood, New South Wales, alt. 900 m, 35° 59' S, 149° 43' E, small tree 3-4 m high, young branchlets glaucous, older branchlets dark grey with glaucous patches, otherwise bark dark grey and smooth, rarely slightly corrugated towards the base in older trees, flowers deep yellow; on steep scree hillside among loose stones with *Eucalyptus smithii*, *E. blaxlandii*, *E. fastigata*, *Beyeria lasiocarpa*, *Hakea macraeana*, *Prostanthera*, etc., a common tree at head of creeks, some plants seen 10-12 m high (often glaucous hue from a distance), *R. Coveny* 6532, *P. Hind* & *M. Parris*, 18.v.1975 (NSW). **ISOTYPES**: A, AD, B, BRI, CANB, CBG, CHR, K, L, LE, MEL, NU, P, PERTH, UC, US, Z.

**DISTRIBUTION**: NEW SOUTH WALES: Southern Tablelands: Bendethera Caves-Dampier trig fire-trail, Minuma Range, southwards to Mother Woila, Tabletop Mountain and the Tuross River. This species is of scattered occurrence or forms stands usually less than 50 m from creeks on very steep, dry, rocky hillsides with a NW. aspect at the heads of gullies and on the tops of knife-edge ridges. It often grows in association with *Eucalyptus smithii*, *E. fastigata*, *E. fraxinoides* and a small form of *E. badjensis* (or possibly an undescribed related species) as well as *E. blaxlandii*, *E. olsenii*, *E. sieberi*, *Acacia falciformis* and *A. obtusifolia* in drier areas, and with *Casuarina cunninghamiana* on the banks of streams. *Acacia olsenii* usually occurs on scree and soil over slate and shale bedrock but sometimes also in alluvial sands.

**FLOWERING PERIOD**: May.

**FRUITING PERIOD**: November to January.



SPECIMENS EXAMINED: NEW SOUTH WALES: Southern Tablelands: 3.2 km ENE. of Dampier trig on the Bendethera Caves fire trail, 53 km SSW. of Braidwood, 35° 59' S, 149° 43' E, alt. 900 m, *R. Coveny* 6358, *P. Hind* & *M. Parris* 18.5.1975 (NA, NSW, NY, RSA, TL, TNS, U); E. of Big Badja Hill, ridge N. of Mother Woila, 3.7 km from Dampier trig, 36° 01' S, 149° 39' E, *M. D. Crisp* 2377, *D. J. Cummings* & *A. Tyrrel*, 30.11.1976 (NSW); Razorback approach to Mother Woila, 36° 03' S, 149° 39' E, 950 m alt., *I. Olsen* 2053, 13.4.1974; base of bluffs of Mother Woila, 36° 03' S, 149° 39' E, alt. 950 m abundant, *I. Olsen* 3094, 19.11.1977 (CANB, CBG, K, L, MEL, TL, UC, US, Z); Razorback ridge approach to Mother Woila, 36° 03' S, 149° 39' E, alt. 1 000 m, *I. Olsen* 3091, 19.11.1977 (AD, PERTH); ridge-top S. of Tabletop, 36° 04' S, 149° 40' E, *I. Olsen* 2997, 17.12.1976 (NSW); Tuross R, 14 km below Tuross Falls, 36° 12' S, 149° 35' E, *I. Olsen* 3005, 30.12.1976 (NSW).

This species is named in honour of Mr Ian Olsen, formerly Landscape Designer at the Royal Botanic Gardens, Sydney, since he drew this wattle to my attention. He collected this species on a bushwalking trip and subsequently returned to the Mother Woila region to obtain fruiting material at my request. The comparatively late discovery of *A. olsenii* must be attributed to the rugged terrain in which it grows.

It is a member of the ser. *Botrycephalae* according to the classification of Benthams (1864 and 1875) and to sect. *Botrycephalae* according to Pedley's scheme (1978) and to subgen. *Heterophyllum* sect. *Uninervea* according to Vassal's scheme (1972). *A. storyi* Tindale (1966) 147 is very closely allied to *A. olsenii* but differs in the following respects:—the capitula pale yellow and 15–20 flowered, less numerous pairs of pinnules (32–61) and the margins of the pinnules with fewer white cilia. There is a considerable disjunction in the distribution of these two species, as *A. olsenii* occurs in SE. New South Wales, on slate and shale or on interbedded slate and sandstone, whereas *A. storyi* has only been recorded from the Blackdown Tableland, Queensland, on sandstone. The latter species flowers from April to August and *A. olsenii* in May.

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## REFERENCES

- Bentham, G. (1864). 'Flora Australiensis.' Vol. 2. (Lovell, Reeve & Co.: London).
- Bentham, G. (1875). Revision of the suborder Mimoseae. *Trans. Linn. Soc. London* 30 (3): 335-669.
- Maiden, J. H. in Ewart A. J., & Davies O. B. (1917). 'Flora of the Northern Territory.' Appendix IV. (McCarron, Bird & Co.: Melbourne).
- Maiden, J. H., & Betche E. (1916). 'A Census of New South Wales Plants.' (Government Printer: Sydney).
- Pedley, L. (1974). Notes on *Acacia*, chiefly from Queensland IV. *Contr. Queensland Herb.*, No. 15.
- Pedley, L. (1978). A revision of *Acacia* Mill. in Queensland. *Austrobaileya* 1 (2): 75-234.
- Specht, R. L. (1958). The Gymnospermae and Angiospermae collected on the Arnhem Land Expedition. 'Records of the American-Australian Scientific Expedition to Arnhem Land'. Vol. 3. (Melbourne University Press: Melbourne).
- Tindale, Mary D. (1966). New taxa of *Acacia* from eastern Australia No. 2. *Proc. Linn. Soc. New South Wales* 91: 147-151.
- Tindale Mary D., & Roux, D. G. (1974). An extended phytochemical survey of Australian species of *Acacia*: chemotaxonomic and phylogenetic aspects. *Phytochemistry* 13: 829-839.
- Vassal, J. (1972). Apport des recherches ontogéniques et séminologiques à l'étude morphologique, taxonomique et phylogénique du genre *Acacia*. *Trav. Lab. Forest. Toulouse*, tome 1, vol. 8: 1-128.